

The Inflation Reduction Act, Explained

What the Biggest Clean Energy Bill in History Means for Your Business

SEIA Webinar
September 1, 2022



Powering the Solar+ Decade



The Journey to Today

- IRA signed into law by President Biden on August 16th, 2022
 - SEIA organized tens of thousands of letters, hundreds of company meetings, over 100 sites visits
 - Focused work in key states
 - Pioneered a proactive manufacturing agenda that is already yielding domestic investments
 - Membership is an investment in the country, investment in climate, investment in our industry's future



Section 48 Investment Tax Credit and Production Tax Credit >1 MW_{AC}

Pre-Guidance
through 2024

ITC: 30%
PTC: 100%

60 Days
Post-Guidance
through 2024

ITC: 6%+24%
PTC: 20%+80%

Tech
Neutral 48E

2025-2032+

ITC: 6%+24%
PTC: 20%+80%

Labor Policy

Prevailing Wage

Apprenticeship Requirements

Prevailing Wage

- During construction and 5 years post PIS for ITC and 10 years for solar PTC.
- Applies to construction, alteration, and repair; and only to repair and alteration during 5 and 10- year period.
- Rectify Errors
 - Pay difference + interest (defined in 6621)
 - Penalty to Secretary \$5,000
- Intentional Disregard
 - Three times sum of pay difference as above
 - Penalty of \$10,000
- Have 180 days to pay after "final determination"



Apprenticeships

- *Registered Apprenticeship Program*
 - Defined in § 3131(e)(3)(B)
 - *Total hours* in construction, alteration, or repair performed by contractor or subcontractor with exclusions
2022: 10% 2023: 12.5% 2024 + : 15%
- *Apprentice to Journeyworker Ratio*
 - Subject to apprentice-to-journeyworker ratios of Dept. of Labor / State Apprenticeship Agency
- *Participation*
 - Each taxpayer, contractor, or subcontractor who employs 4 or more individuals shall employ 1 or more qualified apprentices
- *Rectify Errors*
 - Pay \$50 x number of labor hours for which requirement was not satisfied - \$500 if intentional disregard
- *Good faith effort*
 - Defined as requested of RAP and not refused
 - Response within five days



Adder Credits

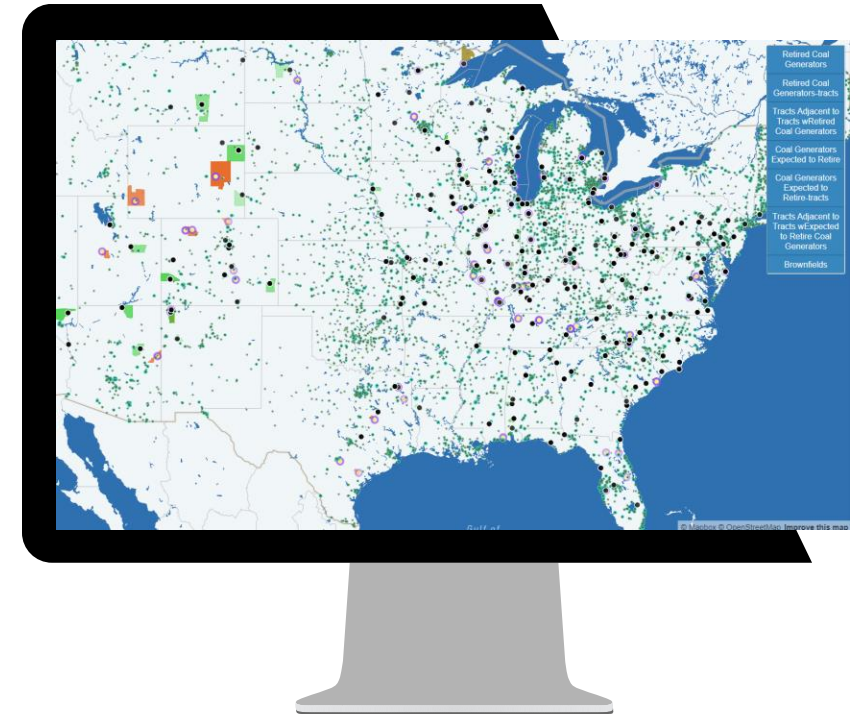
Domestic Content

Energy Communities

Low Income Allocated

Adder Credits

- **Energy Communities**
 - Certain areas with histories related to fossil fuel extraction, use and employment.
 - Map tool for premium SEIA members to view coal-fired power plants that have retired since 2010 or have expired retirements through 2036, as well as the census tracts (and adjacent tracts) to these facilities
- **Domestic Content**
 - CFR 661
 - 100% Steel/Iron (661.5)
 - 40% Manufactured Products (40/45/50/55%)
- **Low Income Allocated Credit**
 - 10%: the project is located in a low-income community or on tribal land
 - 20%: the project is part of a qualified low-income residential building project or a qualified low-income economic benefit project
 - 1.8 GW_{DC} total per year



www.seia.org/ECmap

Section 25D 30% ITC for 10 years followed by a phase down

	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
Credit Prior to IRA	26%	22%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Credit Under IRA	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	30%	26%	22%	0%

Storage ITC

- Standalone energy storage projects are added as qualifying under the section 48 ITC and for 25D.
- Nameplate capacity of not less than 5 kilowatt hours for Sec. 48
- Nameplate capacity of not less than 3 kilowatt hours for 25D.
- The standalone storage credit for section 48 is available for projects placed in service after December 31, 2022.
- The storage credit for 25D is available for expenditures made after December 31, 2022.

Interconnection

- For projects below 5 MW, interconnection costs can be included in Sec. 48 ITC.



Direct Pay

- Direct pay generally is available to companies only for manufacturing production credits (45X) as well as for hydrogen projects and carbon capture projects.
- However, direct pay for other energy projects is only available for certain entities:
 - A) Any entity exempt from the tax under Title A
 - B) Any State government (or political subdivision thereof),
 - C) The Tennessee Valley Authority
 - D) A Native American tribal government
 - E) An Alaska Native Corporation.
 - F) Any corporation operating on a cooperative basis which is engaged in furnishing electric energy to persons in rural areas

For those that can qualify for direct pay -- a project loses its ability to receive 100% direct pay over time absent meeting domestic content requirements. 100% direct pay in 2023, 90% in 2024, 85% in 2025, then 0%.

Transferability

- Companies (for example, developers) may choose to transfer the ITC or PTC to another taxpayer (as well as other credits including
- A transferee (the party receiving a transferred credit) must pay for the credit in cash, and the funds received for the credit won't be included in the gross income of the original recipient of the credit, and the transferee can't deduct the amount paid for the credit.
- The provisions include the process for transferring the credit within a partnership, and a credit may not be transferred twice.



Inflation Act Manufacturing Incentives



Demand

- Long-term extension of the Investment Tax Credit (30%)
- Domestic Content Bonus Credit (10%)
- Energy Community Bonus Credit (10%)



CapEx

- 48C Manufacturing Tax Credit (30%)
- Covers new facilities and equipment



Scale

- 45X Advanced Production Manufacturing Credit
- Targets module value chain, trackers, inverters, and battery value chain

48C and 45X

1. 48C is a 30% allocated investment tax credit for eligible investment costs in facilities and equipment
 - a) \$10 billion allocated for the Section 48C tax credits, and up to \$6 billion can go to projects located outside of census tracts (or adjacent tracts) where a coal mine closed after 1999 or a coal-fired power plant was retired after 2009
2. 45X is a manufacturing production credit for certain components based on the volume of product manufactured
3. Manufacturers can only seek to take or the other; that is, a manufacturer cannot claim the 48C investment tax credit and then claim the 45X production credit for product from the same factory

									100%	75%	50%	0%
	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033
Solar												
PV Modules	7 ¢/Wdc	7 ¢/Wdc	7 ¢/Wdc	7 ¢/Wdc	7 ¢/Wdc	7 ¢/Wdc	7 ¢/Wdc	7 ¢/Wdc	5.3 ¢/Wdc	3.5 ¢/Wdc	1.8 ¢/Wdc	0.0 ¢/Wdc
Thin-Film PV Cells	5 ¢/Wdc	5 ¢/Wdc	5 ¢/Wdc	5 ¢/Wdc	5 ¢/Wdc	5 ¢/Wdc	5 ¢/Wdc	5 ¢/Wdc	3.8 ¢/Wdc	2.5 ¢/Wdc	1.3 ¢/Wdc	0.0 ¢/Wdc
Crystalline Silicon PV Cells	4 ¢/Wdc	4 ¢/Wdc	4 ¢/Wdc	4 ¢/Wdc	4 ¢/Wdc	4 ¢/Wdc	4 ¢/Wdc	4 ¢/Wdc	3.0 ¢/Wdc	2.0 ¢/Wdc	1.0 ¢/Wdc	0.0 ¢/Wdc
Crystalline Silicon PV Wafers	\$12/m2	\$12/m2	\$12/m2	\$12/m2	\$12/m2	\$12/m2	\$12/m2	\$12/m2	\$9/m2	\$6/m2	\$3/m2	\$0/m2
Solar Grade Polysilicon	\$3/kg	\$3/kg	\$3/kg	\$3/kg	\$3/kg	\$3/kg	\$3/kg	\$3/kg	\$2.25/kg	\$1.50/kg	\$0.75/kg	\$0/kg
Polymer Backsheets	\$0.40/m2	\$0.40/m2	\$0.40/m2	\$0.40/m2	\$0.40/m2	\$0.40/m2	\$0.40/m2	\$0.40/m2	\$0.30/m2	\$0.20/m2	\$0.10/m2	\$0/m2
Inverters*												
Central Inverter	0.25 ¢/Wac	0.25 ¢/Wac	0.25 ¢/Wac	0.25 ¢/Wac	0.25 ¢/Wac	0.25 ¢/Wac	0.25 ¢/Wac	0.25 ¢/Wac	0.19 ¢/Wac	0.13 ¢/Wac	0.06 ¢/Wac	0.00 ¢/Wac
Utility Inverter	1.50 ¢/Wac	1.50 ¢/Wac	1.50 ¢/Wac	1.50 ¢/Wac	1.50 ¢/Wac	1.50 ¢/Wac	1.50 ¢/Wac	1.50 ¢/Wac	1.13 ¢/Wac	0.75 ¢/Wac	0.38 ¢/Wac	0.00 ¢/Wac
Commercial Inverter	2.00 ¢/Wac	2.00 ¢/Wac	2.00 ¢/Wac	2.00 ¢/Wac	2.00 ¢/Wac	2.00 ¢/Wac	2.00 ¢/Wac	2.00 ¢/Wac	1.50 ¢/Wac	1.00 ¢/Wac	0.50 ¢/Wac	0.00 ¢/Wac
Residential Inverter	6.50 ¢/Wac	6.50 ¢/Wac	6.50 ¢/Wac	6.50 ¢/Wac	6.50 ¢/Wac	6.50 ¢/Wac	6.50 ¢/Wac	6.50 ¢/Wac	4.88 ¢/Wac	3.25 ¢/Wac	1.63 ¢/Wac	0.00 ¢/Wac
Microinverter	11.00 ¢/Wac	11.00 ¢/Wac	11.00 ¢/Wac	11.00 ¢/Wac	11.00 ¢/Wac	11.00 ¢/Wac	11.00 ¢/Wac	11.00 ¢/Wac	8.25 ¢/Wac	5.50 ¢/Wac	2.75 ¢/Wac	0.00 ¢/Wac
Trackers												
Torque tube or longitudinal purlin	\$0.87/kg	\$0.87/kg	\$0.87/kg	\$0.87/kg	\$0.87/kg	\$0.87/kg	\$0.87/kg	\$0.87/kg	\$0.65/kg	\$0.44/kg	\$0.22/kg	\$0.00/kg
Structural fasteners	\$2.28/kg	\$2.28/kg	\$2.28/kg	\$2.28/kg	\$2.28/kg	\$2.28/kg	\$2.28/kg	\$2.28/kg	\$1.71/kg	\$1.41/kg	\$0.57/kg	\$0.00/kg
Batteries												
Electrode active materials**	10%	10%	10%	10%	10%	10%	10%	10%	7.5%	50%	2.5%	0%
Cells (\$/kWh)	\$35	\$35	\$35	\$35	\$35	\$35	\$35	\$35	\$26.3	\$17.5	\$8.8	\$0
Modules (\$/kWh)	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$10	\$7.5	\$5	\$2.5	\$0
Modules that don't use cells (\$/kWh)	\$45	\$45	\$45	\$45	\$45	\$45	\$45	\$45	\$33.8	\$22.5	\$11.3	\$0
Critical Materials**	10%	10%	10%	10%	10%	10%	10%	10%	7.5%	5%	2.5%	0%

Source: SEIA Summary of Inflation Reduction Act (H.R. 5376)

Catalyzing American Solar Manufacturing

- A roadmap to achieving 50 GW of domestic solar manufacturing capacity by 2030
- IRA is a gamechanger
- Investments will take time:
 - 2-3 years for modules, trackers, inverters, backsheet, and solar glass
 - 3-5 years for metallurgical grade silicon and polysilicon upgrades plus new ingot/wafer and cell capacity
- Building a well-trained and diverse manufacturing workforce



Exploring Supply Chain Timelines

Gantt Chart: Primary Solar Module Component Siting, Permitting and Construction Timelines⁹



Component	AD/CDV SE Asia Anticircumvention Pause																																															
	Jun-22	Jul-22	Aug-22	Sep-22	Oct-22	Nov-22	Dec-22	Jan-23	Feb-23	Mar-23	Apr-23	May-23	Jun-23	Jul-23	Aug-23	Sep-23	Oct-23	Nov-23	Dec-23	Jan-24	Feb-24	Mar-24	Apr-24	May-24	Jun-24	Jul-24	Aug-24	Sep-24	Oct-24	Nov-24	Dec-24	Jan-25	Feb-25	Mar-25	Apr-25	May-25	Jun-25	Jul-25	Aug-25	Sep-25	Oct-25	Nov-25	Dec-25	Jan-26	Feb-26	Mar-26	Apr-26	May-26
Metalurgical Grade Silicon	Declaration	DPA (and SEMA?) Regs Dev.																																														
Polysilicon			Restart Existing Polysilicon Facilities							Export Polysilicon to SE Asia Ingot/Wafer Production															Sell Poly to Domestic Ingot/Wafer				→																			
Ingot/Wafer			Site, Permit, Construct and Commission Ingot and Wafer																			Wafer Production w/ Domestic Poly				→																						
Cell			Site, Permit, Construct and Commission New Cell Capacity (Likely HJT and TOPCon)																		Cell Production w/ Imported Wafers				Cells w/ Domestic Wafers				→																			
Glass, Frame, Backsheet, Encapsulant and Junction Box			Initial Expansion							Production and Continual Capacity Expansion																			→																			
Module			Site, Permit, Construct and Commission New Module Capacity											Module Production Using Imported Cells						Module Production w/ Domestic Cells									→																			
Domestic Demand/Installations			Buy From Existing U.S. Module and Backfill with Imports							Buy Domestic and Imported Modules that Use Cells Containing U.S. Polysilicon									Expand U.S. Module Procurement									→																				

Environmental and Climate Justice Block Grants

1. \$3 billion block grant for environmental justice projects for disadvantaged communities.
2. Eligible projects include those that address environmental harms in low-income and disadvantaged communities related to: pollution monitoring, investment in zero-emission infrastructure, transportation emissions reduction, climate resiliency, pollution prevention, and deployment of low-and zero-emission energy technologies.
3. The structure and administration of this block grant will need to be further defined through the EPA's regulatory process.



Greenhouse Gas Reduction Funds

This bill creates numerous programs providing grants and other financial assistance for projects that reduce GHG emissions, including:

- \$27 billion for a Greenhouse Gas Reduction Fund that will provide technology-neutral funding to states, nonprofits, and other institutions for projects that reduce or avoid GHG emissions and other forms of air pollution.
- \$8 billion of this funding is specifically earmarked for low-income and disadvantaged communities.
- \$5 billion in competitive grants to states, tribes, and municipalities to develop and implement GHG emissions reduction plans.
- \$3 billion to fund installation of zero-emission port equipment or technology.



DOE Loan Program Office

1. \$40 billion in additional commitment authority.
2. With some exceptions, including national interest transmission corridor projects, loan guarantees now require Presidential certification that the project is not receiving other federal funding or assistance.
3. New \$250 billion commitment authority for projects that “retool, repower, repurpose, or replace” electricity or fossil fuel infrastructure that has ceased operations, or enable operating infrastructure to avoid, reduce, utilize, or sequester air pollutants or greenhouse gases; terms limited to 30 years.

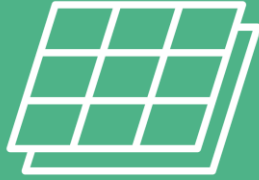


Transmission Loans

- \$2 billion for loans to non-federal entities for constructing new electric transmission facilities in designated national interest corridors.
- The loan can't exceed 80% of the cost of the project, can't be subordinate to other financing, and is limited to a term that is the lesser of 90% of the project's life or 30 years.

Grants to Facilitate the Siting of Interstate Electricity Transmission Lines

- \$760 million for the Department of Energy to issue grants to state, local, or tribal entities for studying covered transmission projects 275 kV and higher and carrying out related economic development and regulatory proceedings.
- Funding is contingent on the transmission project being approved or, in the case of a non-permitting entity, commencement of construction.



Solar Right-of-Way Restrictions

- For a period of 10 years post-enactment, DOI is prohibited from issuing a solar right-of-way on onshore federal lands unless Interior has held an onshore oil and gas lease sale in the previous 120 days at which the lesser of 2,000,000 acres or 50% of acreage for which expressions of interest have been submitted are offered.
- \$150,000,000 for additional hiring of Interior personnel for project review and permitting.



Department of Agriculture Programs

- Additional \$1 billion for rural renewable energy electrification loans and expansion of the program to include storage.
- Additional \$1 billion for REAP, with total grants limited to 50% of the total cost of an eligible project
- \$9.6 billion for loans and financing for rural co-ops to purchase renewable energy, generation, zero-emission systems, and related transmission, limited to 25% of total cost.

Questions?

